C. Humphrey: So now let's go into the actual cumulative effects approach. Now this structure is not a required format, but we think it'll be useful in constructing the cumulative effects analysis. Your resource management plan/EIS or other programmatic document can be helpful in developing your cumulative effects analysis.

R. Hardt: Before you can initiate a cumulative effects analysis you need to identify your preliminary issues for analysis and describe the affected environment. In identifying the issues for analysis, these may be issues that are identified by the interdisciplinary team in internal scoping or they may be brought to you by public and external scoping. To refresh yourself on issue identification, you can review Section 6.4 in the BLM NEPA Handbook. Determining which of the issues identified for analysis may involve a cumulative effect with other past, present, or reasonably foreseeable future actions. If the proposed action and alternatives would have no direct or indirect effects on a resource, you do not need a cumulative effects analysis on that resource.

C. Humphrey: This is a cumulative effects analysis course. I thought we were encouraging people to do cumulative effects, and now you're saying that sometimes we don't have to do it?

R. Hardt: Right. What we're interested in here in cumulative effects analysis is understanding our incremental effect on a resource in the context of all the things affecting that resource. Now if our increment is not measurable, if there is no impact that we can identify from our proposed action, then there's no need to proceed to understanding how others may be affecting that resource. It doesn't teach us anything about whether or not our action is going to have a significant impact or how we should make a choice among the alternatives.

Next, describe the affected environment. You need to describe the existing conditions of your resources related to your identified issues. The description of the affected environment is important to provide a starting point for the cumulative impact analysis. Your description as to the affected environment should be no longer than necessary to understand the effects of the alternatives.

C. Humphrey: So this might be pretty obvious, it might not need to be said, but any of the process steps in this cumulative effects analysis might need to be revisited as we work through your analysis. It's not necessarily a linear process, it might be iterative, and we think that Figure 6.3 in the BLM NEPA Handbook helps you to understand several of the steps, so you might want to refer to that.

K. Bogdan: So after you've identified that this is an issue and you've described the existing condition for the resource, the **first step** in the cumulative effects assessment is to determine the geographic and temporal scope of the issue, and to do that you're gonna be setting the boundaries for each resource both geographic and temporal. These boundaries are going to possibly differ by resource and possibly by issue within the resource. It's going

to encompass the extent of the direct and indirect effects of the proposed action and the alternative.

So in the NEPA process, this comes first certainly within scoping. You're going to initially assess this in the description of the affected environment in starting your effects analysis, and then you're going to revisit this after your preliminary effects analysis has been completed.

So starting with geographic scope. That's generally based on the natural boundaries of the resource that's affected, and this is rather than your jurisdictional boundaries. It is normally again going to vary by resource; an example might be analyzing water quality issues. You would want to look at the watershed as the appropriate geographic boundary rather than some county or state line or office line. For analyzing another example, air quality, you're going to be looking at the airshed rather than political boundary issue or geographic boundary for your effects assessment. Be sure when you're doing this and setting these boundaries that you provide a rationale for that in your analysis. It needs to be somewhere either in the NEPA document, but certainly elsewhere in the administrative record would be appropriate.

Now CEQ has recommended that the following geographic areas are considered in setting your geographic boundaries for analysis. This table here shows you that there are a variety of scales you might be considering when defining your geographic scope for your cumulative effects analysis.

Now moving on to the temporal scope. Again, it's generally based on the *duration of the effects* of the proposed action or the alternatives, and this duration--that's the relevant part here--the duration of the effect. The duration of the action itself is not as relevant. You're thinking of this in terms of the indirect effects that could incur later in time, and again, it's not the effect of the action that we're mostly concerned about in developing that timeframe. Of course, these timeframes can vary by resource or by issue.

R. Hardt: The **second step** is to describe the effects of past actions within the geographic scope. You have to consider past actions regardless of who took the action that occurred within the geographic scope to provide a context for the cumulative effects analysis. Past actions can usually be described by their aggregate effect without listing or analyzing the effects of individual past actions. This is discussed more in BLM NEPA Handbook 6.8.3.4. Also, CEQ has issued a memorandum on this subject that's very instructive.

Typically the affected environment section will provide a description of the aggregate effect of past actions. Regardless of whether you describe the effect of past actions in aggregate or individually, it needs to be sufficient to show how the resource got into its current condition.

The **third step** is to describe the effects of other present actions within the geographic scope. You need to collect information on ongoing actions regardless of who is taking the action that are occurring within the geographic scope of your analysis. This should have been addressed in scoping. You need to describe the direct and indirect effects of these actions on the resource at issue.

K. Bogdan: **Step 4** is to describe the effects of reasonably foreseeable actions within that geographic and temporal scope. Now, reasonably foreseeable actions need to be considered regardless of who is proposing to take that action, and this, of course, should be addressed first in scoping. The BLM NEPA Handbook includes an explanation on reasonably foreseeable actions. These should include proposals that have already been approved, that have already been funded, or which are highly probable based on known opportunities or trends. We're gonna discuss this in a lot more detail in Module 2. Now one caveat on this is you're not required to speculate about future actions that are merely possible but not highly probable. Now for each of these reasonably foreseeable future actions, you must describe the direct and indirect effects of those actions on the resource at issue.

Moving on to **Step 5**, you're going to then describe the direct and indirect effects of the proposed action and each action alternative. Assuming you've already completed the analytical conclusions related to the direct and indirect effects of the proposed action and alternatives, you move that into the cumulative effects analysis. For more information on how to analyze direct and indirect effects, refer to the online NEPA: Analyzing Impacts course.

R. Hardt: **Step 6**: Put together the effects of the past, present, and reasonably foreseeable actions with the effects of the proposed action and describe the interaction among the combined effects. Sometimes you combine them by adding the effects together. Other times you combine the effects by subtracting them.

Let's go back to our earlier example about habitat restoration. So we might have our habitat restoration of 4 acres by the BLM proposed action, habitat restoration by the Forest service of 2 acres, and we simply add those together for, 4+2 = 6 and we add that to our existing condition of 1,000 acres and we get 1,006. Sometimes we might subtract though. Imagine this is our new current condition, and let's say BLM is taking an action that's going to remove 4 acres of habitat and the Forest Service is doing more habitat restoration and they're adding 2 acres of habitat, so we would subtract our 4 acres and then add their 2 acres and we'd end up with a new total of 1,004 acres of habitat for that that species. It's simple arithmetic.

Step 7. We need to describe the relationship of the cumulative effects to any thresholds. This is the important part. This is where we interpret what this cumulative effect would mean for the resource. If there are any identified thresholds such as regulatory or biological thresholds, these can be a useful point of comparison for interpreting the impact on the resource. We'll talk more about this in Module 2.

To summarize, let's show you how the steps in the cumulative effects analysis process fit within the NEPA process. On the left we'll show the steps in the NEPA process and we'll illustrate, on the right, corresponding steps in the cumulative effects process. Now remember, you'll often have to revisit parts of the cumulative effects process as you go through the process.

Now first, in scoping, you'll need to gather information on past, present, and reasonably foreseeable future actions. You'll need to collect information on potential issues for analysis.

In identifying issues, you'll need to determine which issues may involve cumulative effects with past, present, and reasonably foreseeable future actions.

As you gather data and describe the affected environment, you'll need to define the geographic and temporal scope of the cumulative effects analysis, and of course you'll need to describe the affected environment including the effect of past actions.

As you describe effects, you'll need to describe the effects of reasonable foreseeable future actions within the geographic and temporal scope of the cumulative effects analysis; you'll need to describe the direct and indirect effects of the proposed action and each action alternative; you'll need to combine the effects of past actions, present, and reasonably foreseeable future actions with the effects of the proposed action and the alternatives; you'll need to describe the interaction among the effects; and you'll need to describe the relationship of those cumulative effects to any thresholds and interpret what those impacts mean to the resource.